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EXAMINER	
LESPERANCE, JEAN E	
ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	10/625,617	OZAWA ET AL.	
	Examiner	Art Unit	
	Jean E. Lesperance	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7/24/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1-27-06, 3-10-06

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed March 14, 2006 is entered and claims 15-28 are pending.

Response to Arguments

2. Applicant's arguments filed March 14, 2006 have been fully considered but they are not persuasive. The applicant argued that the prior art does not disclose or suggest the opposite electrode overlapping the plurality of common power supply lines, and the opposite electrode being formed for the plurality of pixel electrodes. Examiner disagrees because the prior art teach (see Fig.2, the other side of the EL element which is not connected to Vdd overlaps the plurality of common power supply lines (106) and it is formed (the opposite electrode) for the plurality of pixel electrodes 130 of Figure 2). Therefore, the rejection is maintained.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 15-28 are rejected under 35 U.S.C. 102 (e) as being unpatentable over 5,670,792 (Utsugi et al.).

Regarding claim 15, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixel electrodes corresponding to intersections of the plurality of scanning lines and the plurality of data lines Fig.2 (130);

a plurality of first transistors Fig.2 (Qs) having a first gate electrode that is connected to a respective scanning line of the plurality of scanning lines (103);

a plurality of second transistors each of which is connected between one pixel electrode of the plurality of pixel electrodes and common power supply line of the plurality of common power supply lines (QI) (106) of Fig. 2);

a plurality of luminescent elements Fig.2 (EL) each of which is disposed between one pixel electrode of the plurality of pixel electrodes and the opposite electrode;

the opposite electrode overlapping the plurality of common power supply lines, and the opposite electrode being formed for the plurality of pixel electrodes (see Fig.2, the other side of the EL element which is not connected to Vdd overlaps the plurality of common power supply lines (106) and it is formed (the opposite electrode) for the plurality of pixel electrodes 130 of Figure 2),

the potential of the corresponding common power supply line being higher than a potential of the opposite electrode when one second transistor of the plurality of second transistors that is disposed between one pixel electrode of the plurality of pixel electrodes and one common power supply line is "on" state (the capacitor C then has its terminal voltage applied between a gate and a source of the current-controlling transistor Q.sub.I so that, depending on a drain current vs. gate voltage characteristic of the transistor Q.sub.I a current is conducted from the power supply electrode line 105 through the luminescent element EL and the transistor Q.sub.I to a common electrode line 106, making the luminescent element EL luminesce. It therefore is possible to make the luminescent element EL luminesce with a preset luminance determined from a relationship between the luminance of the element EL and the imposed voltage on the capacitor C. Moreover, the applied voltage between the gate and the source of the current-controlling transistor Q.sub.I is maintained by a quantity of stored charges in the capacitor C, at a substantially constant voltage for a predetermined time period (column

3, lines 10-25)) where at the positive side of the EL element is the pixel electrode and at the negative side is the opposite electrode and current flows from negative to positive and at Figure 2, it shows that the current is flowing toward the common electrode line (106) which means that it is at a higher potential than the opposite, and

the potential of one pixel electrode of the plurality of the pixel electrodes being higher than the potential of the opposite electrode when one luminescent element of the plurality of luminescent elements that is disposed between the one pixel electrode and the opposite electrode is in an "on" state (the pixel electrode is at the positive side of the EL element and the opposite electrode is at the negative side of the EL element which means that the pixel electrode has a higher potential than the opposite electrode when Gs is “on”).

Regarding claim 16, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixels Fig.2 (130), each pixel of the plurality of pixels comprising:

a plurality of first transistor Fig.2 (Qs) having a first gate electrode that is connected to a respective scanning line of the plurality of scanning lines (103);

a plurality of second transistor (Ql) to control conduction between a respective common power supply line (106) of the plurality of common power supply lines (106); and

a plurality of luminescent element Fig.2 (EL) provided between a pixel electrode and an opposite electrode opposed to the pixel electrode,

the opposite electrode overlapping the plurality of common power supply lines, and the opposite electrode being formed for the plurality of pixel electrodes (see Fig.2, the other side of the EL element which is not connected to Vdd overlaps the plurality of common power supply lines (106) and it is formed (the opposite electrode) for the plurality of pixel electrodes 130 of Figure 2),

the potential of one common power supply line of the plurality of common power supply lines being higher than the potential of the opposite electrode when a current flows from one common power supply line of the plurality of the power supply lines to the opposite electrode (the capacitor C then has its terminal voltage applied between a gate and a source of the current-controlling transistor Q.sub.l so that, depending on a drain current vs. gate voltage characteristic of the transistor Q.sub.l a current is

conducted from the power supply electrode line 105 through the luminescent element EL and the transistor Q.sub.I to a common electrode line 106, making the luminescent element EL luminesce. It therefore is possible to make the luminescent element EL luminesce with a preset luminance determined from a relationship between the luminance of the element EL and the imposed voltage on the capacitor C. Moreover, the applied voltage between the gate and the source of the current-controlling transistor Q.sub.I is maintained by a quantity of stored charges in the capacitor C, at a substantially constant voltage for a predetermined time period (column 3, lines 10-25)), and

the potential of one pixel electrode of the plurality of pixel electrodes being higher than a potential of the opposite electrode when a current flows from one common power supply line of the plurality of power supply lines to the opposite electrode (the pixel electrode is at the positive side of the EL element and the opposite electrode is at the negative side of the EL element which means that the pixel electrode has a higher potential than the opposite electrode).

Regarding claim 17, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixels corresponding to intersections of the plurality of scanning lines and plurality of data lines Fig.2 (130);

a plurality of first transistors Fig.2 (Qs) having a gate electrode connected to one scanning line of the plurality of scanning lines (103);

a plurality of second transistors each of which is connected between one pixel electrode of the plurality of pixel electrode and one common power supply line of the plurality of common power supply lines Fig.2 (QI);

a plurality of luminescent elements each of which is disposed between one pixel electrode of the plurality of pixel electrodes and the opposite electrode Fig.2 (EL);

the potential of one common power supply line of the plurality of common power supply lines being higher than the potential of the opposite electrode when a current flows from one common power supply line of the plurality of the power supply lines to the opposite electrode (capacitor C then has its terminal voltage applied between a gate and a source of the current-controlling transistor Q.sub.I so that, depending on a drain current vs. gate voltage characteristic of the transistor Q.sub.I a current is conducted from the power supply electrode line 105 through the luminescent element EL and the transistor Q.sub.I to a common electrode line 106, making the luminescent element EL

luminesce. It therefore is possible to make the luminescent element EL luminesce with a preset luminance determined from a relationship between the luminance of the element EL and the imposed voltage on the capacitor C. Moreover, the applied voltage between the gate and the source of the current-controlling transistor Q.sub.I is maintained by a quantity of stored charges in the capacitor C, at a substantially constant voltage for a predetermined time period (column 3, lines 10-25)), and

the potential of one pixel electrode of the plurality of pixel electrodes being higher than a potential of the opposite electrode and lower than the potential of the one common power supply line of the plurality of common power supply lines when a current flows from one common power supply line of the plurality of power supply lines to the opposite electrode (the pixel electrode is at the positive side of the EL element and the opposite electrode is at the negative side of the EL element which means that the pixel electrode has a higher potential than the opposite electrode and)) where at the positive side of the EL element is the pixel electrode and at the negative side is the opposite electrode and current flows from negative to positive and at Figure 2, it shows that the current is flowing toward the common electrode line (106) which means that it is at a higher potential than the opposite and the pixel electrode potential is lower than the common electrode).

Regarding claim 18, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be

difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixel electrodes corresponding to intersections of the plurality of scanning lines and the plurality of data lines Fig.2 (130);

a plurality of first transistors Fig.2 (Qs) having a first gate electrode that is connected to a respective scanning line of the plurality of scanning lines (103);

a plurality of second transistors each of which is connected between one pixel electrode of the plurality of pixel electrodes and common power supply line of the plurality of common power supply lines (Ql) (106) of Fig. 2);

a plurality of luminescent elements Fig.2 (EL) each of which is disposed between one pixel electrode of the plurality of pixel electrodes and the opposite electrode;

the opposite electrode overlapping the plurality of common power supply lines, and the opposite electrode being formed for the plurality of pixel electrodes (see Fig.2, the other side of the EL element which is not connected to Vdd overlaps the plurality of

common power supply lines (106) and it is formed (the opposite electrode) for the plurality of pixel electrodes 130 of Figure 2),

each of the plurality of luminescent elements being able to emit a light due to a driving current that flows from a corresponding one of the plurality of pixel electrodes to the opposite electrode (the electron injection electrode 55 is patterned like an independent iland in each picture element region, while the organic thin-film layer 52 and the hole injection electrode 54 are made common to the whole picture elements of the luminous element array, i.e. formed over the entire region of a display panel. In the panel, when an arbitrary picture element is selected to be driven, there develops an electric field acting thereon, causing the organic luminescent layer 52B to luminescent, externally emitting flux of light through the transparent electrode 54 (column 6, lines 54-63)),

the potential of one common power supply line of the plurality of common power supply lines being higher than the potential of the opposite electrode when a current flows from one common power supply line of the plurality of the power supply lines to the opposite electrode (the capacitor C then has its terminal voltage applied between a gate and a source of the current-controlling transistor Q.sub.I so that, depending on a drain current vs. gate voltage characteristic of the transistor Q.sub.I a current is conducted from the power supply electrode line 105 through the luminescent element EL and the transistor Q.sub.I to a common electrode line 106, making the luminescent element EL luminescent. It therefore is possible to make the luminescent element EL luminescent with a preset luminance determined from a relationship between the

luminance of the element EL and the imposed voltage on the capacitor C. Moreover, the applied voltage between the gate and the source of the current-controlling transistor Q.sub.I is maintained by a quantity of stored charges in the capacitor C, at a substantially constant voltage for a predetermined time period (column 3, lines 10-25)), and

the potential of one pixel electrode of the plurality of pixel electrodes being higher than a potential of the opposite electrode when a current flows from one common power supply line of the plurality of power supply lines to the opposite electrode (the pixel electrode is at the positive side of the EL element and the opposite electrode is at the negative side of the EL element which means that the pixel electrode has a higher potential than the opposite electrode).

Regarding claim 19, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixel electrodes corresponding to intersections of the plurality of scanning lines and the plurality of data lines Fig.2 (130);

a plurality of first transistors Fig.2 (Qs) having a first gate electrode that is connected to a respective scanning line of the plurality of scanning lines (103);

a plurality of second transistors each of which is connected between one pixel electrode of the plurality of pixel electrodes and common power supply line of the plurality of common power supply lines (Ql) (106) of Fig. 2);

a plurality of luminescent elements Fig.2 (EL) each of which is disposed between one pixel electrode of the plurality of pixel electrodes and the opposite electrode;

the opposite electrode overlapping the plurality of common power supply lines, and the opposite electrode being formed for the plurality of pixel electrodes (see Fig.2, the other side of the EL element which is not connected to Vdd overlaps the plurality of common power supply lines (106) and it is formed (the opposite electrode) for the plurality of pixel electrodes 130 of Figure 2),

each of the plurality of luminescent elements being able to emit a light due to a driving current that flows from a corresponding one of the plurality of pixel electrodes to the opposite electrode (the electron injection electrode 55 is patterned like an independent iland in each picture element region, while the organic thin-film layer 52

and the hole injection electrode 54 are made common to the whole picture elements of the luminous element array, i.e. formed over the entire region of a display panel. In the panel, when an arbitrary picture element is selected to be driven, there develops an electric field acting thereon, causing the organic luminescent layer 52B to luminescent, externally emitting flux of light through the transparent electrode 54 (column 6, lines 54-63)),

the potential of the second gate electrode being lower than or being equal to the potential of the corresponding common power supply line (the second electrode of Q1 of Figure 2 is lower than the common electrode line of the above set of pixel electrodes,

the potential of one common power supply line of the plurality of common power supply lines being higher than the potential of the opposite electrode when a current flows from one common power supply line of the plurality of the power supply lines to the opposite electrode (the capacitor C then has its terminal voltage applied between a gate and a source of the current-controlling transistor Q.sub.I so that, depending on a drain current vs. gate voltage characteristic of the transistor Q.sub.I a current is conducted from the power supply electrode line 105 through the luminescent element EL and the transistor Q.sub.I to a common electrode line 106, making the luminescent element EL luminescent. It therefore is possible to make the luminescent element EL luminescent with a preset luminance determined from a relationship between the luminance of the element EL and the imposed voltage on the capacitor C. Moreover, the applied voltage between the gate and the source of the current-controlling transistor Q.sub.I is maintained by a quantity of stored charges in the capacitor C, at a

substantially constant voltage for a predetermined time period (column 3, lines 10-25)), and

the potential of one pixel electrode of the plurality of pixel electrodes being higher than a potential of the opposite electrode when a current flows from one common power supply line of the plurality of power supply lines to the opposite electrode (the pixel electrode is at the positive side of the EL element and the opposite electrode is at the negative side of the EL element which means that the pixel electrode has a higher potential than the opposite electrode).

Regarding claim 20, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixel electrodes corresponding to intersections of the plurality of scanning lines and the plurality of data lines Fig.2 (130);

a plurality of first transistors Fig.2 (Qs) having a first gate electrode that is connected to a respective scanning line of the plurality of scanning lines (103);

a plurality of second transistors each of which is connected between one pixel electrode of the plurality of pixel electrodes and common power supply line of the plurality of common power supply lines (Ql) (106) of Fig. 2);

a plurality of luminescent elements Fig.2 (EL) each of which is disposed between one pixel electrode of the plurality of pixel electrodes and the opposite electrode;

the opposite electrode overlapping the plurality of common power supply lines, and the opposite electrode being formed for the plurality of pixel electrodes (see Fig.2, the other side of the EL element which is not connected to Vdd overlaps the plurality of common power supply lines (106) and it is formed (the opposite electrode) for the plurality of pixel electrodes 130 of Figure 2),

each of the plurality of luminescent elements being able to emit a light due to a driving current that flows from a corresponding one of the plurality of pixel electrodes to the opposite electrode (the electron injection electrode 55 is patterned like an independent iland in each picture element region, while the organic thin-film layer 52 and the hole injection electrode 54 are made common to the whole picture elements of the luminous element array, i.e. formed over the entire region of a display panel. In the panel, when an arbitrary picture element is selected to be driven, there develops an electric field acting thereon, causing the organic luminescent layer 52B to luminescent,

externally emitting flux of light through the transparent electrode 54 (column 6, lines 54-63)),

the potential of the second gate electrode being higher than or being equal to the potential of the opposite electrode (the second electrode of Q1 of Figure 2 is equal to the potential the opposite electrode line because they are located at the same point,

the potential of one common power supply line of the plurality of common power supply lines being higher than the potential of the opposite electrode when a current flows from one common power supply line of the plurality of the power supply lines to the opposite electrode (the capacitor C then has its terminal voltage applied between a gate and a source of the current-controlling transistor Q.sub.I so that, depending on a drain current vs. gate voltage characteristic of the transistor Q.sub.I a current is conducted from the power supply electrode line 105 through the luminescent element EL and the transistor Q.sub.I to a common electrode line 106, making the luminescent element EL luminescent. It therefore is possible to make the luminescent element EL luminescent with a preset luminance determined from a relationship between the luminance of the element EL and the imposed voltage on the capacitor C. Moreover, the applied voltage between the gate and the source of the current-controlling transistor Q.sub.I is maintained by a quantity of stored charges in the capacitor C, at a substantially constant voltage for a predetermined time period (column 3, lines 10-25)), and

the potential of one pixel electrode of the plurality of pixel electrodes being higher than a potential of the opposite electrode when a current flows from one common

power supply line of the plurality of power supply lines to the opposite electrode (the pixel electrode is at the positive side of the EL element and the opposite electrode is at the negative side of the EL element which means that the pixel electrode has a higher potential than the opposite electrode).

Regarding claim 21, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixel electrodes corresponding to intersections of the plurality of scanning lines and the plurality of data lines Fig.2 (130);

a plurality of first transistors Fig.2 (Qs) having a first gate electrode that is connected to a respective scanning line of the plurality of scanning lines (103);

a plurality of second transistors each of which is connected between one pixel electrode of the plurality of pixel electrodes and common power supply line of the plurality of common power supply lines (QI) (106) of Fig. 2);

a plurality of luminescent elements Fig.2 (EL) each of which is disposed between one pixel electrode of the plurality of pixel electrodes and the opposite electrode;

the opposite electrode overlapping the plurality of common power supply lines, and the opposite electrode being formed for the plurality of pixel electrodes (see Fig.2, the other side of the EL element which is not connected to Vdd overlaps the plurality of common power supply lines (106) and it is formed (the opposite electrode) for the plurality of pixel electrodes 130 of Figure 2),

each of the plurality of luminescent elements being able to emit a light due to a driving current that flows from a corresponding one of the plurality of pixel electrodes to the opposite electrode (the electron injection electrode 55 is patterned like an independent iland in each picture element region, while the organic thin-film layer 52 and the hole injection electrode 54 are made common to the whole picture elements of the luminous element array, i.e. formed over the entire region of a display panel. In the panel, when an arbitrary picture element is selected to be driven, there develops an electric field acting thereon, causing the organic luminescent layer 52B to luminescent, externally emitting flux of light through the transparent electrode 54 (column 6, lines 54-63)),

the potential of the second gate electrode being higher than or being equal to the potential of the opposite electrode (the second electrode of Q1 of Figure 2 is equal to the potential the opposite electrode line because they are located at the same point,

the potential of one common power supply line of the plurality of common power supply lines being higher than the potential of the opposite electrode when a current flows from one common power supply line of the plurality of the power supply lines to the opposite electrode (the capacitor C then has its terminal voltage applied between a gate and a source of the current-controlling transistor Q.sub.I so that, depending on a drain current vs. gate voltage characteristic of the transistor Q.sub.I a current is conducted from the power supply electrode line 105 through the luminescent element EL and the transistor Q.sub.I to a common electrode line 106, making the luminescent element EL luminescent. It therefore is possible to make the luminescent element EL luminescent with a preset luminance determined from a relationship between the luminance of the element EL and the imposed voltage on the capacitor C. Moreover, the applied voltage between the gate and the source of the current-controlling transistor Q.sub.I is maintained by a quantity of stored charges in the capacitor C, at a substantially constant voltage for a predetermined time period (column 3, lines 10-25)), and

the potential of one pixel electrode of the plurality of pixel electrodes being higher than a potential of the opposite electrode when a current flows from one common power supply line of the plurality of power supply lines to the opposite electrode (the pixel electrode is at the positive side of the EL element and the opposite electrode is at

the negative side of the EL element which means that the pixel electrode has a higher potential than the opposite electrode).

Regarding claim 22, Utsugi et al. teach the first transistor and the second transistor being of opposite conduction type to each other (a switching transistor connected between said signal electrode line and a gate of said current-controlling transistor, said switching transistor having a gate connected to said scan electrode line for turning on and off said current controlling transistor thus allowing a current to flow through said electroluminescent element (column 11, lines 14-19)).

Regarding claim 23, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixel electrodes corresponding to intersections of the plurality of scanning lines and the plurality of data lines Fig.2 (130);

a plurality of first transistors Fig.2 (Qs) having a first gate electrode that is connected to a respective scanning line of the plurality of scanning lines (103);

a plurality of second transistors each of which is connected between one pixel electrode of the plurality of pixel electrodes and common power supply line of the plurality of common power supply lines (Ql) (106) of Fig. 2);

a plurality of luminescent elements Fig.2 (EL) each of which is disposed between one pixel electrode of the plurality of pixel electrodes and the opposite electrode;

the opposite electrode overlapping the plurality of common power supply lines, and the opposite electrode being formed for the plurality of pixel electrodes (see Fig.2, the other side of the EL element which is not connected to Vdd overlaps the plurality of common power supply lines (106) and it is formed (the opposite electrode) for the plurality of pixel electrodes 130 of Figure 2),

each of the plurality of luminescent elements being able to emit a light due to a driving current that flows from a corresponding one of the plurality of pixel electrodes to the opposite electrode (the electron injection electrode 55 is patterned like an independent iland in each picture element region, while the organic thin-film layer 52 and the hole injection electrode 54 are made common to the whole picture elements of the luminous element array, i.e. formed over the entire region of a display panel. In the panel, when an arbitrary picture element is selected to be driven, there develops an electric field acting thereon, causing the organic luminescent layer 52B to luminescent,

externally emitting flux of light through the transparent electrode 54 (column 6, lines 54-63)),

the potential of the second gate electrode being higher than or being equal to the potential of the opposite electrode (the second electrode of Q1 of Figure 2 is equal to the potential the opposite electrode line because they are located at the same point,

the potential of one common power supply line of the plurality of common power supply lines being higher than the potential of the opposite electrode when a current flows from one common power supply line of the plurality of the power supply lines to the opposite electrode (the capacitor C then has its terminal voltage applied between a gate and a source of the current-controlling transistor Q.sub.I so that, depending on a drain current vs. gate voltage characteristic of the transistor Q.sub.I a current is conducted from the power supply electrode line 105 through the luminescent element EL and the transistor Q.sub.I to a common electrode line 106, making the luminescent element EL luminescent. It therefore is possible to make the luminescent element EL luminescent with a preset luminance determined from a relationship between the luminance of the element EL and the imposed voltage on the capacitor C. Moreover, the applied voltage between the gate and the source of the current-controlling transistor Q.sub.I is maintained by a quantity of stored charges in the capacitor C, at a substantially constant voltage for a predetermined time period (column 3, lines 10-25)), and

the potential of one pixel electrode of the plurality of pixel electrodes being higher than a potential of the opposite electrode when a current flows from one common

power supply line of the plurality of power supply lines to the opposite electrode (the pixel electrode is at the positive side of the EL element and the opposite electrode is at the negative side of the EL element which means that the pixel electrode has a higher potential than the opposite electrode).

Regarding claim 24, Utsugi et al. teach the second transistor (Qs) being of P-channel type.

Regarding claim 25, Utsugi et al. teach the second transistor (Qs) being of P-channel type.

Regarding claim 26, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixel electrodes corresponding to intersections of the plurality of scanning lines and the plurality of data lines Fig.2 (130);

a plurality of first transistors Fig.2 (Qs) having a first gate electrode that is connected to a respective scanning line of the plurality of scanning lines (103);

a plurality of second transistors each of which is connected between one pixel electrode of the plurality of pixel electrodes and common power supply line of the plurality of common power supply lines (QI) (106) of Fig. 2);

a plurality of luminescent elements Fig.2 (EL) each of which is disposed between one pixel electrode of the plurality of pixel electrodes and the opposite electrode;

the potential of one pixel electrode of the plurality of pixel electrodes being higher to the potential of the opposite electrode (the pixel electrode of the above transistor similar to Q1 is higher than the opposite electrode of Q1 of the lower pixel.

Regarding claim 27, Utsugi et al. teach a display apparatus (the organic EL element of a charge injection type employing a thin-filmed organic luminescent material as an illuminant, hereinafter called "organic thin-film EL element", is attracting attentions for the possibility of realizing an inexpensive full-colored wide display that would be difficult by using an inorganic thin-film EL element or an LED (column 1, lines 18-24)) comprising:

a plurality of scanning lines Fig.2 (103);

a plurality of data lines (101);

a plurality of common power supply lines Fig.2 (106);

an opposite electrode (an electrode thereof at the opposite end to another connected to a luminescent element EL (column 5, lines 65 and 66) (see Fig.2, the other side of the EL element which is not connected to Vdd);

a plurality of pixel electrodes corresponding to intersections of the plurality of scanning lines and the plurality of data lines Fig.2 (130);

a plurality of first transistors Fig.2 (Qs) having a first gate electrode that is connected to a respective scanning line of the plurality of scanning lines (103);

a plurality of second transistors each of which is connected between one pixel electrode of the plurality of pixel electrodes and common power supply line of the plurality of common power supply lines (Ql) (106) of Fig. 2);

a plurality of luminescent elements Fig.2 (EL) each of which is disposed between one pixel electrode of the plurality of pixel electrodes and the opposite electrode;

the opposite electrode overlapping the plurality of common power supply lines, and the opposite electrode being formed for the plurality of pixel electrodes (see Fig.2, the other side of the EL element which is not connected to Vdd overlaps the plurality of common power supply lines (106) and it is formed (the opposite electrode) for the plurality of pixel electrodes 130 of Figure 2),

each of the plurality of luminescent elements being able to emit a light due to a driving current that flows from a corresponding one of the plurality of pixel electrodes to the opposite electrode (the electron injection electrode 55 is patterned like an independent iland in each picture element region, while the organic thin-film layer 52

and the hole injection electrode 54 are made common to the whole picture elements of the luminous element array, i.e. formed over the entire region of a display panel. In the panel, when an arbitrary picture element is selected to be driven, there develops an electric field acting thereon, causing the organic luminescent layer 52B to luminescent, externally emitting flux of light through the transparent electrode 54 (column 6, lines 54-63)),

the potential of a data signal to turn on each pixel being higher than or being equal to the potential of the opposite electrode (the data signal line 101 is higher than the opposite electrode of Q1,

the potential of one common power supply line of the plurality of common power supply lines being higher than the potential of the opposite electrode when a current flows from one common power supply line of the plurality of the power supply lines to the opposite electrode (the capacitor C then has its terminal voltage applied between a gate and a source of the current-controlling transistor Q.sub.I so that, depending on a drain current vs. gate voltage characteristic of the transistor Q.sub.I a current is conducted from the power supply electrode line 105 through the luminescent element EL and the transistor Q.sub.I to a common electrode line 106, making the luminescent element EL luminescent. It therefore is possible to make the luminescent element EL luminescent with a preset luminance determined from a relationship between the luminance of the element EL and the imposed voltage on the capacitor C. Moreover, the applied voltage between the gate and the source of the current-controlling transistor Q.sub.I is maintained by a quantity of stored charges in the capacitor C, at a

substantially constant voltage for a predetermined time period (column 3, lines 10-25)), and

the potential of one pixel electrode of the plurality of pixel electrodes being higher than a potential of the opposite electrode when a current flows from one common power supply line of the plurality of power supply lines to the opposite electrode (the pixel electrode is at the positive side of the EL element and the opposite electrode is at the negative side of the EL element which means that the pixel electrode has a higher potential than the opposite electrode).

Regarding claim 28, Utsugi et al. teach the second transistor (Qs) being of P-channel type.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (571) 272-7692. The examiner can normally be reached on from Monday to Friday between 10:OOAM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance

Jean Lesperance

Art Unit 2629

Date 3/31/2006

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600